

Work Order ID 84239

May-08-12 10:39:28 AM

84239

PRELIMINARY ISSUE

Page 1

Item ID: D350-748-143

Accept

N900040100

Setup Start *NS1*

Revision ID: PRELIM

Stop *NS2*

Item Name: Crosstube Assembly, High Fwd

Start Date: 5/08/12 Start Qty: 1.00

1

Cust Item ID:

Required Date: 5/15/12 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

W

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D350-748-143	PA1								

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPPD350-748-101

CHG002

110

0.00

110

BENDING MACHINE - CROSSTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

Bend tube as per Dwg D350-748-143 using CNC bender program

DP 12-5-15

120

QC15- Crosstube Dimensional Check

0.00

120

QC

Memo

0.00

Quality Control

Q 12.05.15

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Item ID: D350-748-143 Accept *N900040100* Setup Start *NS1*
Revision ID: PRELIM Stop *NS2*
Item Name: Crosstube Assembly, High Fwd
Start Date: 5/08/12 Start Qty: 1.00 *1* Cust Item ID:
Required Date: 5/15/12 Req'd Qty: 1.00 *1* Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Crosstubes	0.00							
130									
Crosstubes	Memo	0.00							
Crosstubes	1-Drill Tube as per Dwg D350-748-143 Set-up drill table as per QSI 010								
	2-Deburr								
	3-Engrave Part # and Batch # as per Dwg D350-748-143								
	4-Remove all marks from tube within limits of D350-748-141								
	5- Apply a light coat of LPS3 on the interior of tube Batch: _____								
140	QC5- Inspect part completeness to step on W/O	0.00							
140									
QC	Memo	0.00							
Quality Control									

INSTALL (2) D3502-1 SUPPORT
(2) MS21920 - 2 CLAMP
(2) D3545-43-430 CUSHION

MO 12-5-16
TW 12-5-16
12-05-16

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N900040100

Setup Start *NS1*

Stop *NS2*

*** 1 ***

Cust Item ID:

*** 1 ***

Customer:

Reference:

Run Start *NR1*

Stop ***NR2***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

180

180

SprayPaint

Spray Painting

SprayPaint

Memo

1-Prime inside crosstube as per QSI 005 4.2
2-Prime Outside of Tube as per Dart QSI 005 4.2

0.00

0.00

No finish *Q* 12.05.15

190

190

QC

Quality Control

QC14- Inspect Spray Paint

Memo

Then, Wrap in plastic bag to protect from scratches

0.00

0.00

N/A $\phi_{12.05.1}$

200

200

Crosstubes

Crosstubes

Crosstubes

Memo

0.00

0.00

12-5-10

12.05.15
 INSTALL (2) D3502-1 SUPPORT
 (2) M521926-26 CLAMP
~~(2) D3595-063 430 CUSHION~~

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Item ID: D350-748-143 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: PRELIM Stop ***NS2***
 Item Name: Crosstube Assembly, High Fwd
 Start Date: 5/08/12 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 5/15/12 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	QC5- Inspect part completeness to step on W/O	0.00							
210									
QC	Memo	0.00							
Quality Control									
220	Pick Kit	0.00							
220									
Packaging	Memo	0.00	N/A	CP					
Packaging				12.05.13					
230	QC4- 100% inspect kits for completeness	0.00							
230									
QC	Memo	0.00	N/A	CP					
Quality Control				12.05.13					

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Item ID: D350-748-143 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: PRELIM Stop ***NS2***
Item Name: Crosstube Assembly, High Fwd
Start Date: 5/08/12 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 5/15/12 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	Packaging	0.00							
240									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D350-748-101								
	Location: _____								
	PPP Rev: _____								
250	QC21- Final Inspection - Work Order Release	0.00							
250									
QC	Memo	0.00							
Quality Control									

N/A FOR TEST ONLY 9/12.05.13

RD3400

U 1205.23

POSITIVE RECALL
EFFECTIVE 12.05.08 AUTH W
RELEASED _____ DATE _____

Picklist Print

May-08-12 10:39:27 AM

Page 1

Work Order ID: 84239

Parent Item: D350-748-143

Parent Item Name: Crosstube Assembly, High Fwd

Start Date: 5/08/12

Required Date: 5/15/12

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev: PRELIM New Issue LL 12.05.08

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AEELS-1032-225 INSERT		Purchased	No				Each	0.0000		1			
D3502-1 Support		Manufactured	No			1	Each	39.0000		2		AB 12-5-16	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST051		39							
				73419		19			(2)				
				74873		20							
D350-748-143TRN Crosstube Turning Detail		Manufactured	No	BS4235			Each	0.0000		1		JW 12-5-15	
D3595-063-430 RUBBER CUSHION		Manufactured	No				Each	0.0000		2			
MS21920-20 Clamp (per MIL-DTL-8783C)		Purchased	No				Each	116.0000		2		AB 12-5-16	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG050		116							
				116799		8							
				120676		12							
				121067		46			(2)				
				121274		50							
MS27039-1-10 Screw		Purchased	No				Each	186.0000		1			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				GA		100							
				120449		100							
				ST291		86							
				120120		86							

Picklist Print

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Work Order ID: 84239

Parent Item: D350-748-143

Parent Item Name: Crosstube Assembly, High Fwd

Start Date: 5/08/12

Required Date: 5/15/12

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0363J

Purchased

No

Each

3,078.0000

1

Washer

Location

Loc Qty

Loc Code

ST298

3078

117601

61

118077

1

118612

18

119537

33

120142

41

120308

17

120644

232

121243

1175

121524

1500

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Shop Packet Print

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8 7 6 5 4 3 2 1

Item	Qty -143	Part Number	Description
1	X	D350-748-143	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)
2	1	D6021-125	CROSSTUBE
3	2	D3502-1	SUPPORT
4	2	D3595-063-430	RUBBER CUSHION
5	1	AELS-1032-225	INSERT
6	1	NAS1149D0363J	WASHER (OR AN960JD10)
7	2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
8	1	MS27039-1-10	SCREW

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6021-125 (17-4PH)
FINISHED LENGTH = 122.270±0.06
- 2) FINISH: PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-143" AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 30.45 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.297 HOLE.
- 9) BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO
BENDING IS 6% BASED ON O.D.
- 11) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES,
NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY.
CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE
MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO
CRACKING/CHIPPING/GROOVES.
- 12) TORQUE CLAMPS 60 TO 80 IN.-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT
NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 13) MAX TWIST AFTER BENDING: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN
CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.25 (ZN C1-3).

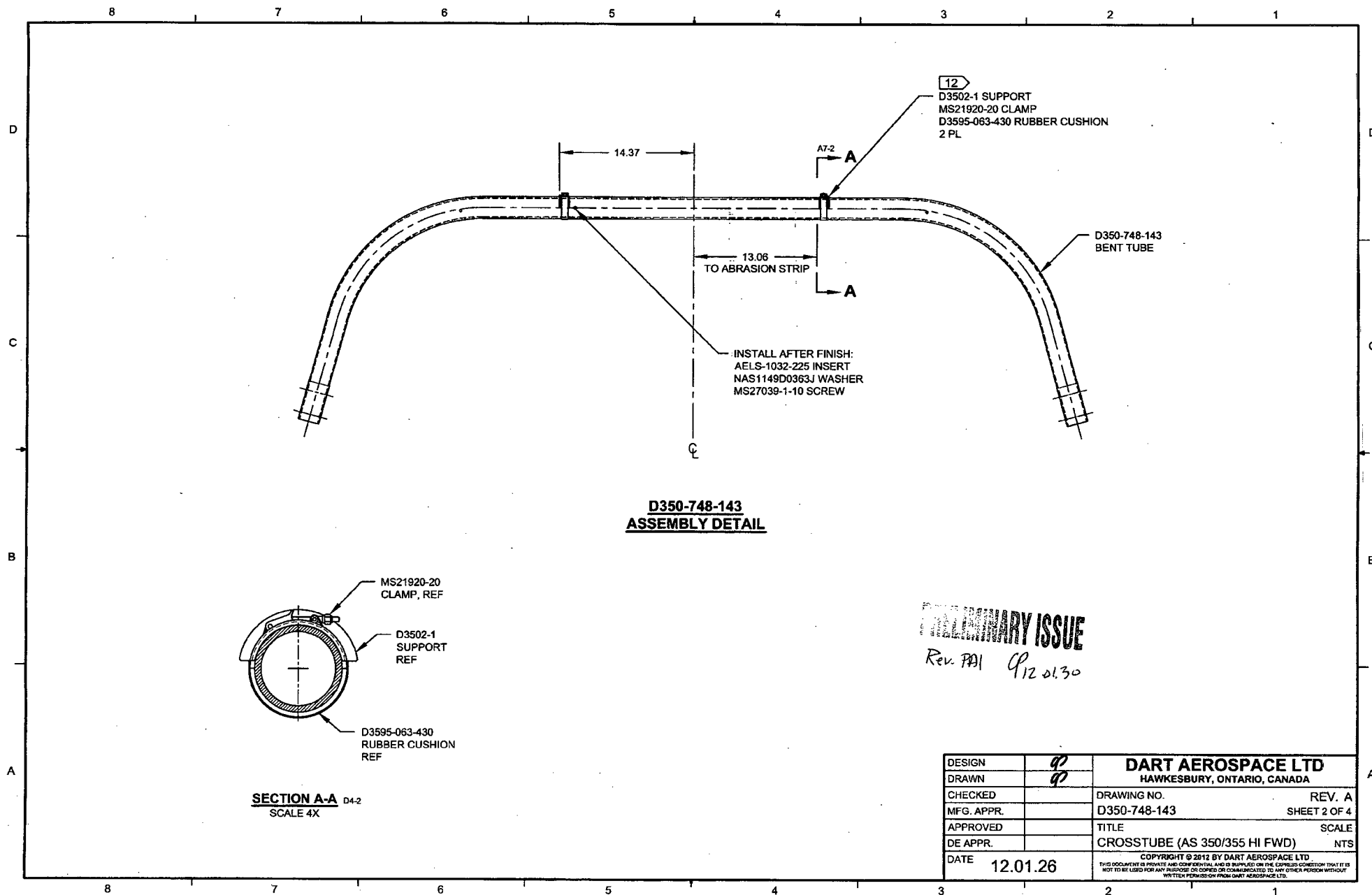
W/O 84239

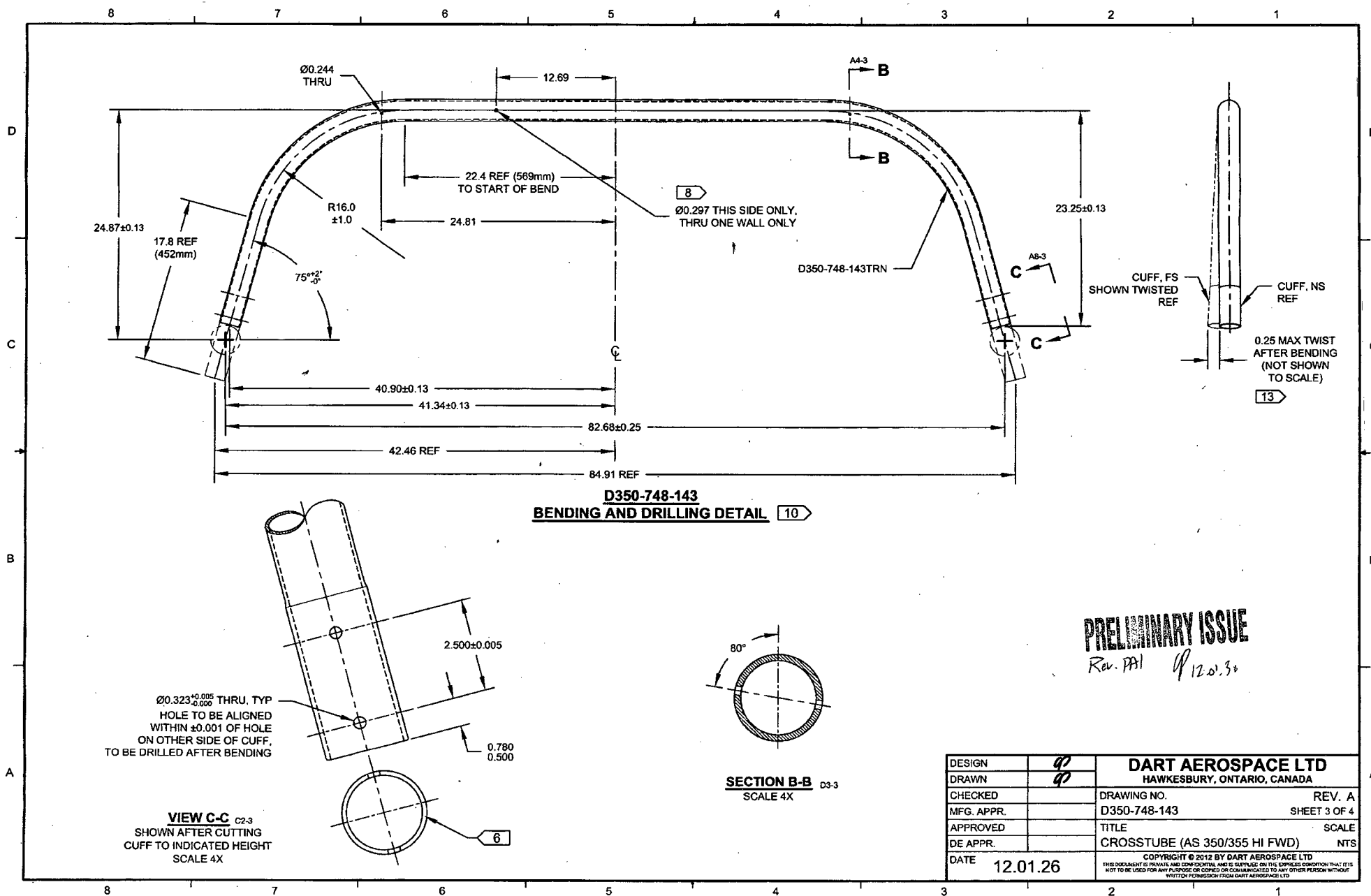
PRELIMINARY ISSUE

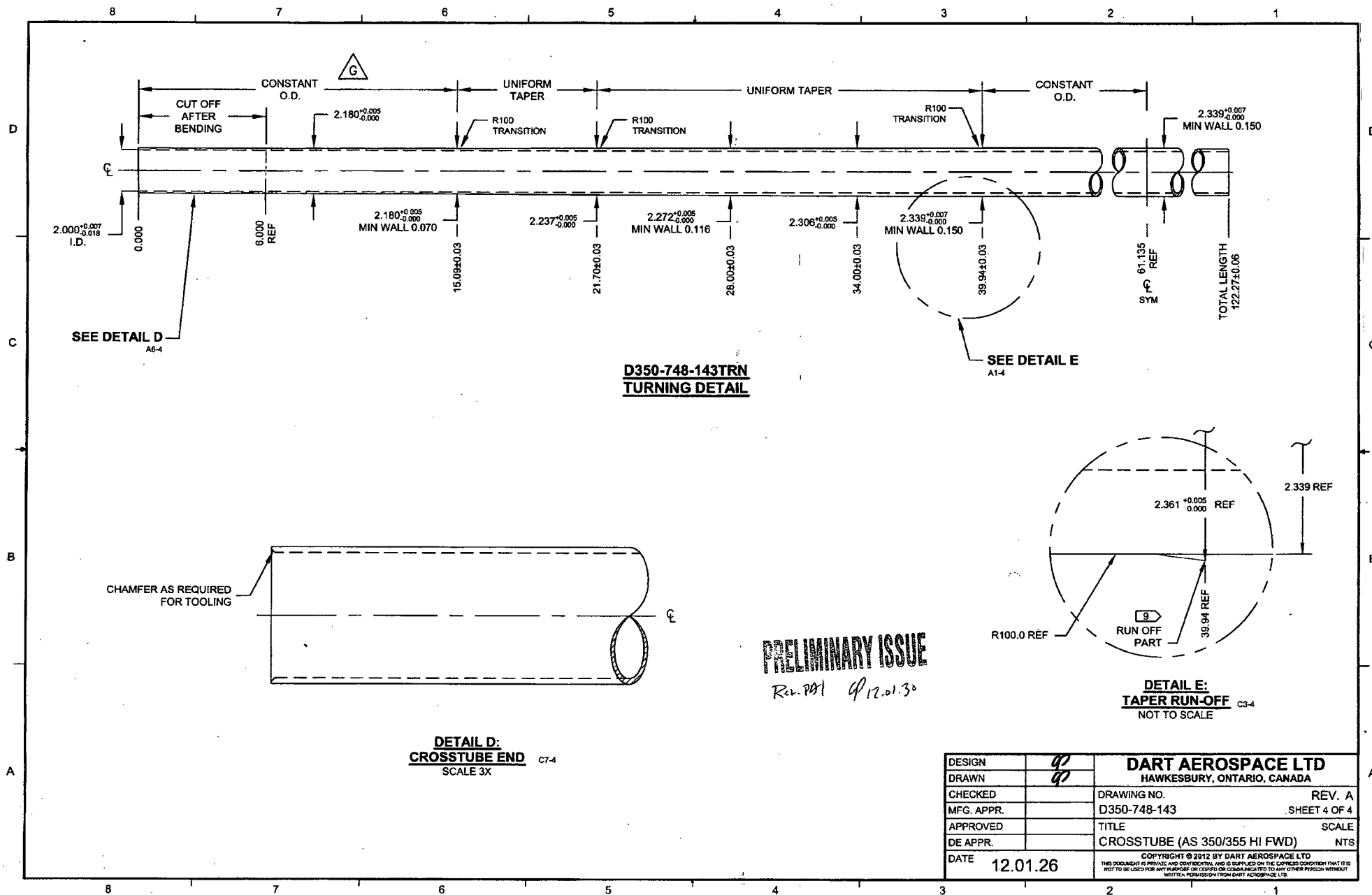
Rev. PA1 12.01.30

PA1	NEW ISSUE	CP	12.01.26
REV.	DESCRIPTION	BY	DATE
DESIGN	PA1	DART AEROSPACE LTD	
DRAWN	PA1	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. X
MFG. APPR.		D350-748-143	SHEET 1 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	12.01.26	<small>COPYRIGHT © 2012 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

8 7 6 5 4 3 2 1



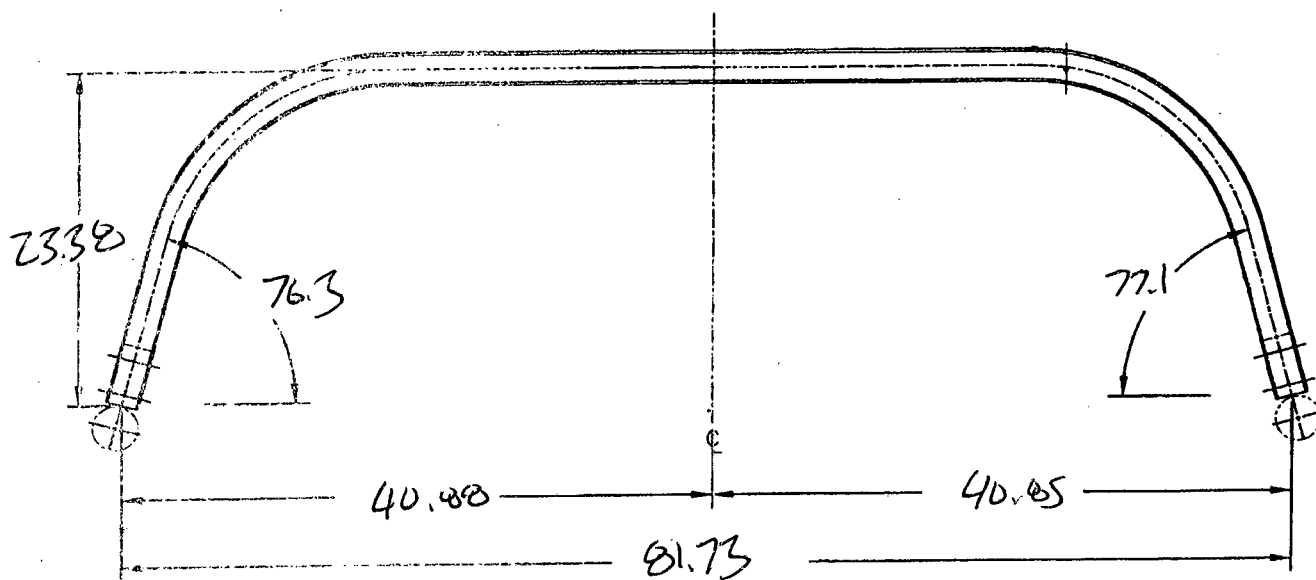




84239 ~~84238~~ 12.05.15

DART AEROSPACE LTD	Work Order:	84239
Description: Crosstube High Fwd (AS350/355)	Part Number:	D350-748-101
Inspection Dwg: D350-748-141 Rev: F		Page 1 of 1

Required Dimension	Min	Max
Height	23.13	23.37
1/2 Span	40.78	41.02
Angle	75	77
Total Span	81.56	82.04



# PASSES	Comments
8/9	CRUSHING 4% / 4.2%
	One dent @ 8.4%
Twist = 0.10	

QC15 Inspection	
Date	12.05.15

Rev	Date	Change	Revised by	Approved
A	07.02.05	New Issue	KJ/JM	
B	10.08.23	Dwg Rev updated	KJ	
C	11.11.07	Dwg Rev updated	KJ	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12.05.15	110	DENT ON ONE SIDE, LOWER BEND, FROM BENDING	<p>CP</p> <p>12.05.15</p> <p>Q51042</p>	Acceptable for test ONLY			<p>CP</p> <p>12.05.15</p> <p>Q51042</p>	

NOTE: Date & initial all entries